

***Amendments to the Claims***

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Currently Amended) A phase locked ~~loop~~ loop, comprising:

reference oscillator means for generating a low phase noise reference frequency

signal;

a voltage controlled oscillator (~~VCO~~) for producing a desired output frequency signal;

a phase detector for comparing ~~the~~ a phase of the low phase noise reference frequency signal to the ~~divided down VCO~~ desired output frequency signal; and

a loop filter for suppressing components of the low phase noise reference frequency ~~components and integrating~~ signal.

35. (Currently Amended) The phase locked loop of claim 34, further comprising a programmable divider for dividing ~~down the VCO~~ desired output frequency signal.

36. (Currently Amended) A frequency ~~synthesizer~~ synthesizer, comprising:

~~an~~ oscillator means for generating a substantially stable differential reference signal;

a ~~divide by integer~~ first divide-by-integer counter for dividing ~~the~~ a frequency generated in the oscillator means down to a first known lower value;

a voltage controlled oscillator for generating a desired output frequency in response to an applied substantially DC voltage;

a ~~divide by integer~~ second divide-by-integer counter for dividing the desired output frequency down to a second known lesser value;

a phase detector for comparing the ~~divided-down reference frequency at the first~~  
known value to the ~~divided-down~~ desired output frequency at the second known value,  
whereby an error voltage proportional to the a difference in phase and frequency is  
produced; and

a low pass filter for converting the error voltage to a DC error voltage.

37. (Currently Amended) A CATV ~~tuner~~ tuner, comprising:

~~a substrate upon which a substantial portion of the tuner circuitry is disposed, and~~  
~~having an RF input connection and an intermediate frequency output connection;~~

a reference oscillator means for providing a substantially stable low noise,  
differential clock signal;

a phase locked loop using the substantially stable low noise, differential ~~low~~  
~~noise reference oscillator~~ clock signal as a frequency reference to produce a local  
oscillator signal;

a filter, coupled to an output of the CATV tuner, to selectively remove spurious  
frequency components at least one of created in the CATV tuner ~~or~~ and received from an  
external source, ~~and undesired to be present at the output of the tuner;~~ and

a mixer that utilizes a the local oscillator signal to produce an intermediate  
frequency ~~that is more easily processed by subsequent circuitry.~~

38. (Currently Amended) A television set top ~~box~~ box, comprising;

a transceiver for receiving ~~programming~~ a program and ordering ~~services~~ a service;

~~an~~ oscillator means ~~to provide~~ for providing a reference frequency that is used in ~~the~~ frequency conversion of a received signal corresponding to the program;

a decryption circuit ~~allowing~~ that allows ~~premium programming~~ the program to be received and descrambled ~~such~~ so that it the program is viewable; and

~~a memory to store information; and~~

a decoder to produce an audio and video signal corresponding to the program.

39. (Currently Amended) A television receiver, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an~~ oscillator means ~~to provide~~ for providing a reference signal in the television receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal ~~to be performed~~;

audio signal processing means for processing the incoming television signal ~~such~~ so that it the incoming television signal ~~may be~~ is capable of being heard;

video signal processing means for ~~producing~~ processing the incoming television signals signal so that create an image from the incoming television signal is capable of being displayed on a display device; and

a display device that is capable of reproducing ~~an~~ the image that is contained in the transmitted incoming television signal.

40. (Currently Amended) A ~~VCR~~ VCR, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an oscillator means to provide~~ for providing a reference signal in ~~the~~ a receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal to be performed;

audio signal processing means, disposed within a signal path, for processing the incoming television signal such so that it the incoming television signal may be is capable of being heard;

video signal processing means, disposed within the signal path, for ~~producing~~ processing the incoming television signals signal so that create an image from the incoming television signal is capable of being displayed on a display device;

~~a memory for storing a instructions~~;



a recording and ~~play back~~ playback unit that allows the VCR to play and record information stored on a recording ~~media~~ medium; and

a signal switching unit for connecting the recording and playback unit in and out of the signal path.

41. (Currently Amended) A cable ~~modem~~ modem, comprising:

a CATV tuner circuit for reception of an incoming television ~~signals~~ signal at a radio ~~frequencies~~ frequency;

~~an~~ oscillator means ~~to provide~~ for providing a reference signal in ~~the~~ a receiver enabling ~~the~~ frequency conversion of the incoming television ~~circuit~~ signal ~~to be~~ performed;

an Ethernet transceiver for connecting ~~the~~ a cable television network to ~~the~~ an Ethernet, the cable television network capable of conveying the incoming television signal;

a ~~diplexer~~ duplex filter that allows full duplex communication over the CATV cable television network; ~~network~~;

a modulator for encoding data for upstream transmission to the cable television network;

a demodulator for decoding ~~downstream~~ data received from the cable television network.

This listing of claims will replace all prior versions, and listings of claims in the application.